

Inclusive approach to comprehensive retrofitting project

November 24 2014, by Marta Espar



Cuatro de Marzo is a district in the southern part of the Spanish city of Valladolid. It is a dense residential area with 190 privately-owned dwellings, developed in 1955. The area is populated by a series of buildings of medium to poor quality, which are progressively ageing. There, the [R2CITIES project](#), funded by the European Union, is carrying out a comprehensive retrofitting of the buildings. The project involves improving façades and implementing renewable energy systems, both measured being designed to achieve a near zero energy consumption in the district. To reach their objective, promoters are using a method that they refer to as Integrated Project Delivery (IPD).

This involves all the stakeholders working together from the very beginning of the process.

From the kick-off meeting right through the end of the construction phase, Cuatro de Marzo residents have a chance to have a say about the different renovation options available to achieve [energy efficiency](#). "The clients preferences are being taken into account," says Carolina Wendys, project manager of the sustainability and eco-efficiency department of Acciona a Spanish building contractor, specialising in the development of renewable energies. She adds that when such preferences are not feasible, the project partners explain the reasons behind such constraints, based on data obtained from an accurate diagnosis phase where the district barriers and opportunities are analysed. They then offer them other options.

Stakeholders participating in the project are the Valladolid municipality, construction and energy service companies, technology centres and other industrial partners, as well as residents. To involve home owners and to align their aims with those of other [stakeholders](#), the project methodology is relying on a powerful method called Integrated Project Delivery (IPD). The American Institute of Architects (AIA) defines IPD as a method of project management characterised by a contractual arrangement between at least the owner, the constructor and the design professional. It is designed to harness the talents and insights of all these stakeholders with the aims of optimising efficiency through all three phases of design, fabrication and construction.

IPD is proving to be essential in the Valladolid project, Wendys tells youris.com, "because the most difficult obstacle of the rehabilitation is the question of management, due to the multiples expectations of the stakeholders." She adds: "this collaborative approach is turning out to be as important as having the technology at hand." She believes it offers an opportunity for collaborative work, for example, through the so-called

Building Information Modelling (BIM), an open platform for parallel work, where all the participants have free access to the state-of-the-art of the process in order to avoid mistakes and enhance the quality. Thus, this approach helps to save money and time.

IPD facilitates the collaboration of all the parties involved, according to Miguel Ángel García, architect and expert in [energy efficient buildings](#) and cities at the CARTIF Technology Centre, an applied research institute located in Valladolid. But it also helps with risk sharing because decisions are made jointly in the first phases of diagnosis and design. Therefore risks are supported by the same stakeholders if they are present at the execution, commissioning or evaluation phases.

IPD tools and the simulated outcomes of their application are extremely powerful, according to Matteo D'Antoni, senior researcher in the sustainable heating and cooling group of the Institute for Renewable Energy of the European Academy of Bolzano (EURAC). He believes that, if used wisely, it can give very important input to the design of building retrofitting, be it in the case of public non-residential, commercial or residential buildings.

D'Antoni, who is an expert in simulation and numerical calculus, also believes stakeholders in the construction sector should be given different options through simulated processes in order to make the best decisions about how to proceed with renovation projects, from the very beginning of the process. "What should be exported is the methodology, how to approach the [project](#)", says D'Antoni. He concludes: "This is the added value that European projects can bring to the community."

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